

Huber & Schüßler · Truderinger Straße 246 · 81825 München
Europäisches Patentamt
80298 München

Truderinger Straße 246
D-81825 München
Tel.: **49. 89. 43 77 88 - 0
Fax: **49. 89. 43 77 88 99
munich@huber-schuessler.info
www.huber-schuessler.com

Dr. Bernard Huber
Dipl.-Biologe
Dr. Andrea Schüßler
Dipl.-Chemikerin

In Zusammenarbeit mit
Rechtsanwälten
Dr. Wolfram Städtler
Stephan Biagosch

February 27, 2004

File No.: PCT/EP03/03928
Applicant: Affimed
Our Ref: A 3054 - sch / tz

In response to the written opinion dated November 28, 2003

Substantive examination of the present PCT application is requested.

1. Novelty

The claims are novel over the cited prior art.

S. KIPRIYANOV ET AL. describes a number of bispecific antibodies with a specificity to human CD19 or CD30 on lymphona cells as well as to CD3 or CD28 or CD16 on T or NK effector cells. This document does not disclose the specific claimed combination of two different bispecific antibodies, wherein the first antibody recruits T-cells and the second antibody recruits CD3-epsilon negative effector cells.

T. KUDO ET AL. describes antibodies of different specificities potentially useful for tumor therapy. This paper does disclose using antibody combinations recrui-

HypoVereinsbank München
(BLZ 700 202 70)
4 410 221 220
IBAN
DE 34 7002 0270 4410 2212 20
SWIFT (BIC): HYVEDEMMXXX

Deutsche Bank München
(BLZ 700 700 24)
4 362 000
IBAN
DE 85 7007 0024 0436 2000 00
SWIFT (BIC): DEUTDE33MUC

ting different subsets of human effector cells as claimed. All antibodies described in this publication are targeting T-LAK cells against tumor cells.

C. RENNER ET AL. describe the combined use of CD30xCD3 and CD30xCD28 bispecific antibodies. However, both of them are binding T-cells (CD3 epsilon positive cells). Thus, this publication does not disclose to recruit CD3-epsilon negative effector cells as required by claim 1(d).

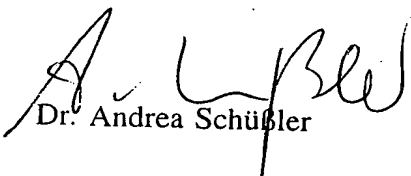
L. DA COSTA ET AL. describe CD30xCD3 and CD30xCD28 bispecific antibodies recruiting T-cells and also CD30xCD16 antibodies retargeting NK cells. However, no hint on using them in combination is given.

2. Inventive Step

The present invention is based on the finding that two different bispecific molecules recruiting different populations of defined effector cells, i.e. T-cells and CD3-epsilon negative cells, to the same tumor target show a significant synergistic therapeutic effect. Example 5 demonstrates that the treatment of SCID mice bearing an established Burkitt's lymphoma with CD19xCD16 and CD19xCD3 results in the complete elimination of tumors in 80% of animals. Such a significant synergistic effect could neither be derived nor expected from the prior art. Hence, the subject-matters of the claims are not obvious.

A favorable International Preliminary Examination Report (IPER) is expected. However, if novelty and/or inventive step cannot be acknowledged, we herewith request for drawing up a second written opinion before the International Preliminary Examination Report is established.

Patent Attorney


Dr. Andrea Schüller

08 OCT 2004

10/510881

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re United States Patent Application of:

Docket No.: 4121-172

Applicant(s): Kipriyanov, et al

Examiner: Not Yet Assigned

**Application No.: New U.S. National Stage Application
of PCT International Application No.
PCT/EP03/03928**

Art Unit: Not Yet Assigned

Int'l Filing Date: 15 April 2003

Customer No.:

Priority Date: 19 April 2002(European Patent Application No. 02008845.6)

23448

**Title: ANTIBODY COMBINATION
USEFUL FOR TUMOR THERAPY**

EXPRESS MAIL CERTIFICATE

I hereby certify that I am mailing the attached documents to the Commissioner for Patents on the date specified, in an envelope addressed to Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 and Express Mailed under the provisions of 37 CFR 1.10.

Joanna Joslyn

October 8, 2004

Date _____

EO 002 820 255 US

Express Mail Label Number

**SUBMISSION UNDER 35 U.S.C. §371 OF UNITED STATES PATENT APPLICATION
(NATIONAL PHASE PROCEEDINGS) BASED ON INTERNATIONAL APPLICATION NO.
PCT/EP03/03928 AND CLAIMING PRIORITY OF EUROPEAN PATENT APPLICATION NO.
02008845.6**

Mail Stop PCT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith for filing under the provisions of 37 CFR §1.53 and 35 U.S.C. §371 is the above-referenced patent application, based on International Patent Application No. PCT/EP03/03928 and claiming priority of European Patent Application No. 02008845.6. A copy of the PCT International application and related documents as originally filed are also included. Further included is a Preliminary Amendment, unsigned Declaration and Power of Attorney, return postcard, a check in the amount of \$556.00, and 35 U.S.C. §371 transmittal forms.

Please direct correspondence relating to this application to Steven J. Hultquist, Intellectual Property Technology Law, P.O. Box 14329, Research Triangle Park, NC 27709, and direct telephonic communications relating to this application to Marianne Fuierer at (919) 419-9350.

Respectfully submitted,



Marianne Fuierer
Registration No. 39,983
Attorney for Applicants

**INTELLECTUAL PROPERTY/
TECHNOLOGY LAW**
P.O. Box 14329
Research Triangle Park, NC 27709
Tel: (919) 419-9350
Fax: (919) 419-9354
Attorney Ref.: 4121-172

FORM PTO-1390

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

4121-172

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

10/510881

INTERNATIONAL APPLICATION NO.

PCT/EP03/03928

INTERNATIONAL FILING DATE

15 April 2003

PRIORITY DATE CLAIMED

19 April 2002

TITLE OF INVENTION

ANTIBODYCOMBINATION USEFUL FOR TUMOR THERAPY

APPLICANT(S) FOR DO/EO/US

KIPRIYANOV, Sergey; LE GALL, Fabrice; COCHLOVIUS, Björn and LITTLE, Melvyn

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).*(Unsigned)
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☒ Small entity status is claimed.
16. ☐ Other items or information:


17. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS		PTO USE ONLY	
Basic National Fee (37 CFR 1.492(a)(1)-(5)): Search Report has been prepared by the EPO or JPO..... \$950.00 International preliminary examination fee paid to USPTO (37 CFR 1.482)..... \$750.00 No International preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2))..... \$790.00 Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO..... \$1110.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4)..... \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				DT04 Rec'd PCT/PTO 08 OCT 2004			
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$			
Claims	Number Filed	Number Extra	Rate				
Total Claims	29 - 20 =	9	X \$18.00	\$		162.00	
Independent Claims	3 - 3 =	0	X \$88.00	\$		0	
Multiple dependent claim(s) (if applicable)			+ \$300.00	\$			
TOTAL OF ABOVE CALCULATIONS =						1112.00	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				\$			
SUBTOTAL =				\$		556.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 Months from the earliest claimed priority date (37 CFR 1.492(f)).				\$			
TOTAL NATIONAL FEE =				\$		556.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$			
TOTAL FEE ENCLOSED =				\$		556.00	
				Amount to be:		\$	
				refunded			
				Charged		\$	

- a. ☒ A check in the amount of **\$556.00** to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 08-3284. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not yet been met, a petition to revive (37 CFR 1.127(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Steven J. Hultquist
Intellectual Property/Technology Law
P. O. Box 14329
Research Triangle Park, NC 27709


Marianne Fuierer
Registration No. 39,983